

AMENDMENT

(Amendment under the provision of Law Section 11) [PCT  
Article 34(2)(b)]

To: Commissioner of the Patent Office

1. Identification of the International Application

PCT/JP03/14280

2. Applicant

Name: JAPAN SCIENCE AND TECHNOLOGY AGENCY

Address: 1-8, Honcho 4-chome, Kawaguchi-shi, Saitama  
332-0012 Japan

Country of nationality: Japan

Country of residence: Japan

3. Agent

Name: Patent Attorney, NISHI, Yoshiyuki

Address: Nishi Patent Office, Suit 211, 26-32, Nakahara  
4-chome, Isogo-ku, Yokohama-shi, Kanagawa 235-  
0036 Japan

4. Item to be Amended

Specification and Claims

## 5. Subject Matter of Amendment

(1) At line 6, page 2 of the specification, delete "ferrite" and insert -- ferrite, e.g., a Ni-Zn ferrite, --.

(2) Cancel Claim 1 now on file.

(3) At line 1, Claim 2, delete "The electromagnetic wave absorber according to Claim 1, characterized in that" and insert -- A SiC-hexagonal ferrite type ceramic composite electromagnetic wave absorber for a high-frequency band, the electromagnetic wave absorber characterized by comprising a composite sintered product of a hexagonal ferrite and SiC, wherein --.

(4) At line 1, Claim 3, delete "The electromagnetic wave absorber according to Claim 1, characterized in that" and insert -- A SiC-hexagonal ferrite type ceramic composite electromagnetic wave absorber for a high-frequency band, the electromagnetic wave absorber characterized by comprising a composite sintered product of a hexagonal ferrite and SiC, wherein --.

(5) At line 1, Claim 4, delete "any one of Claim 1 to" and insert -- Claim 2 or --.

## 6. List of Attached Documents

(1) Page 2 of the specification and Claims

GHz band because of a snake phenomenon (natural resonance occurs in the neighborhood of 1 GHz and, thereby, no absorption is effected in a high-frequency region higher than that).

The inventors of the present invention previously found that a composite sintered product of a spinel ferrite, e.g., a Ni-Zn ferrite, and SiC is effective as an electromagnetic wave absorber in the GHz band (the absorption in the GHz band is based on SiC), and filed an application for a patent (Non-Patent Document 1 and Patent Document 1).

This composite sintered product is produced by combining a spinel ferrite (absorption frequency is a few hundred megahertz) that is a magnetic loss material and SiC (absorption frequency is 10 GHz or more) that is a dielectric loss material. However, only the magnetic loss is manifested, and there is a problem in that although the absorption frequency is increased up to the GHz band, the absorption width is narrow.

It is also known that the hexagonal ferrite serves as an electromagnetic wave absorber in the GHz band (Non-Patent Documents 2 to 4). The resonant frequency of M-type  $\text{BaFe}_{12}\text{O}_{19}$  is 50 GHz. The resonant frequency of  $\text{Ba}[\text{Fe}_{12-x}(\text{Ti}_{0.5}\text{Mn}_{0.5})_x]\text{O}_{19}$  in which Ti and Mn have substituted for Fe is 16 GHz where the amount of substitution  $x = 2.5$ , and the resonant frequency is 6 GHz where  $x = 4.5$ . The resonant

CLAIMS

1. (Cancelled)
2. (Amended) A SiC-hexagonal ferrite type ceramic composite electromagnetic wave absorber for a high-frequency band, the electromagnetic wave absorber characterized by comprising a composite sintered product of a hexagonal ferrite and SiC, wherein SiC is produced by incorporating 1 to 5 percent by weight of SiC powder or fiber into the hexagonal ferrite.
3. (Amended) A SiC-hexagonal ferrite type ceramic composite electromagnetic wave absorber for a high-frequency band, the electromagnetic wave absorber characterized by comprising a composite sintered product of a hexagonal ferrite and SiC, wherein SiC is produced by incorporating 1 to 5 percent by weight of curing-treated SiC precursor into the hexagonal ferrite.
4. The electromagnetic wave absorber according to Claim 2 or Claim 3, characterized in that the hexagonal ferrite is of Y-type or Z-type.
5. The electromagnetic wave absorber according to Claim 4, characterized in that the hexagonal ferrite is  $\text{Ba}_2\text{Ni}_2\text{Fe}_{12}\text{O}_{22}$  or  $\text{Ba}_3\text{Co}_2\text{Fe}_{24}\text{O}_{41}$ .
6. A method for producing the electromagnetic wave absorber according to Claim 2, the method characterized by comprising the steps of incorporating 1 to 5 percent by weight of SiC

powder or fiber into a hexagonal ferrite together with a sintering auxiliary, followed by molding, and conducting sintering at 700°C to 900°C.

7. A method for producing the electromagnetic wave absorber according to Claim 3, the method characterized by comprising the steps of incorporating 1 to 5 percent by weight of curing-treated SiC precursor into a hexagonal ferrite, followed by molding, and conducting sintering.